

What is claimed is:

1. In a packaging machine having an operating member for a packaging operation, a drive device comprising:

a fluid pressure actuator for causing the operating
5 member to perform a reciprocating motion,
a sensor for detecting the cycle velocity or time of the actuator,

a control valve for controlling the pressure or flow rate of a fluid to be supplied to the actuator, and

10 control means for setting a reference value corresponding to the cycle velocity or time of the actuator, receiving a value detected by the sensor as an input, calculating a valve opening degree based on the deviation of the detected value from the reference value
15 and setting the calculated valve opening degree as the opening degree of the control valve.

2. In a packaging machine having an operating member for a packaging operation, a drive device comprising:

a fluid pressure actuator for causing the operating
20 member to perform a reciprocating motion,

a sensor for detecting cycle timing of the actuator,
an on-off valve for on/off-controlling a fluid to be supplied to the actuator, and

control means for setting a reference value
25 corresponding to the cycle timing of the actuator,

receiving a value detected by the sensor as an input,
calculating cycle timing based on the deviation of the
detected value from the reference value and setting the
calculated cycle timing as the cycle timing of the on-off
5 valve.

3. In a packaging machine having an operating member
for a packaging operation, a drive device comprising:
a fluid pressure actuator for causing the operating
member to perform a reciprocating motion,
10 a sensor for detecting cycle timing of the actuator,
an on-off valve for on/off-controlling a fluid to be
supplied to the actuator,
calculating means for setting a reference value
corresponding to the cycle timing of the actuator,
15 receiving a value detected by the sensor as an input and
calculating the deviation of the detected value from the
reference value every cycle, and
control means for calculating the average value of the
deviations of a plurality of cycles calculated by the
20 calculating means, calculating cycle timing based on the
calculated average value and setting the calculated cycle
timing as the cycle timing of the on-off valve.

4. In a packaging machine having an operating member
for a packaging operation, a drive device comprising:
25 a fluid pressure actuator for causing the operating

member to perform a reciprocating motion,

a sensor for detecting the cycle velocity or time of the actuator and detecting cycle timing of the actuator,

a control valve for controlling the pressure or flow
5 rate of a fluid to be supplied to the actuator,

an on-off valve for on/off-controlling the fluid to be supplied to the actuator,

control means for setting an operating time reference value corresponding to the cycle velocity or time of the
10 actuator and a timing reference value corresponding to the cycle timing of the actuator, receiving an operating time value and a timing value detected by the sensor as inputs, calculating a valve opening degree based on the deviation of the detected operating time value from the operating
15 time reference value and cycle timing based on the deviation of the detected timing value from the timing reference value, and setting the calculated valve opening degree as the opening degree of the control valve and the calculated cycle timing as the cycle timing of the on-off
20 valve.

5. A drive device according to any one of claims 1 to 4 wherein the fluid pressure actuator is an air cylinder or a rotary actuator.

6. A drive device according to any one of claims 1 to
25 4 wherein the operating member is one of a piston rod of a

fluid pressure cylinder, a container lift rod of a lifter and a movable rod of a top heater for pivotally moving a heater unit.